
CST1204: Introduction to Databases

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Week 7 Session 1

10/7/2019

Previous Session Review

- Single Table Queries
- Sorting via ORDER BY

Agenda

- WHERE

WHERE Clause Review

- DBMS goes through each row and applies SQL action on the rows where boolean expression is TRUE. In this case, the action is SELECT
 - Computed columns (Ch4 Pg 106)
 - Compound conditions (Ch4 Pg 102)
 - AND, OR, NOT

WHERE Clause: Comparison

- Compare equations

=

<> or !=

> and >=

< and <=

- String comparison: upper case vs lower case

WHERE Clause: Logical Operators

- Logical operators

AND

OR

NOT

WHERE Clause: IN

- Syntax:

```
WHERE <column_computation>  
IN (<value_list>)
```

```
SELECT CUSTOMER_NUM, CUSTOMER_NAME, CREDIT_LIMIT  
FROM CUSTOMER  
WHERE CREDIT_LIMIT IN (5000, 10000, 15000); ←
```


WHERE Clause: BETWEEN...AND

- BETWEEN ... AND (Ch4 Pg 105)

WHERE <column_computation>
BETWEEN <lower_value> AND <upper_value>

```
SELECT CUSTOMER_NUM, CUSTOMER_NAME, BALANCE  
FROM CUSTOMER  
WHERE BALANCE BETWEEN 2000 AND 5000;
```

WHERE Clause: BETWEEN...AND

- Inclusive of lower value and upper value

```
Customer_Num BETWEEN 260 AND 440
```

- Lower value must be lower than upper value

```
Customer_Num BETWEEN 440 AND 260
```

WHERE Clause: String

- String operation: Content of a string is case sensitive

`'city' > 'TECH'`

- Can use BETWEEN...AND and IN too

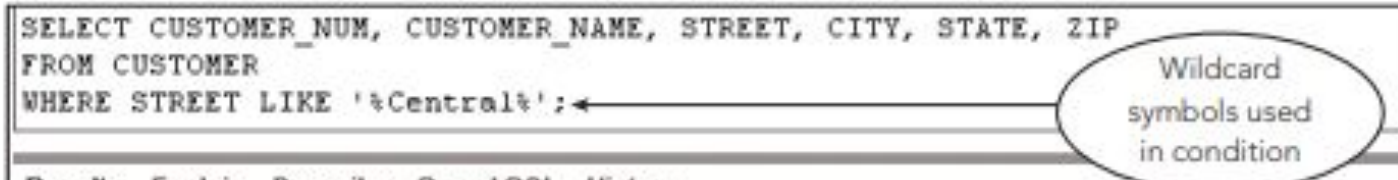
```
WHERE customer_name BETWEEN 'A' AND 'F'
```

WHERE Clause: LIKE

- LIKE: String pattern contains % for multiple character wildcard and _ for single character wildcard (Ch4 Pg 108)

WHERE <column_computation> LIKE <String_Pattern>

```
SELECT CUSTOMER_NUM, CUSTOMER_NAME, STREET, CITY, STATE, ZIP
FROM CUSTOMER
WHERE STREET LIKE '%Central%';
```



Wildcard symbols used in condition

WHERE Clause: LIKE

- Escape '\%' and '_'
- Difference between '____' and '%%%'

WHERE Clause: NULL

- Boolean logic with NULL: TRUE, FALSE, UNKNOWN
- Any logical operation with NULL returns UNKNOWN

```
1 > NULL
```

```
NULL in (NULL, 'TEST')
```

```
Last_Name = NULL
```

- IS NULL and IS NOT NULL

SQL Tips

- How to create a primary key with multiple (>2) columns
- How to insert an unknown/missing value
- How to determine “not equal”
- How to achieve 10% increase/decrease
- How to select each value only once
- How to check strings starting with/ending with ‘C’
- How to check strings containing ‘tech’

Homework Review

- Homework submission
- Chapter 6 exercise questions for Colonial Adventure Tours
 - ***Make sure you run your SQL before submission!!!***
 - Use template to generate text file as attachment.
 - Don't put in email body.
 - Don't use Word or rich text editor.
 - Adding semicolon after all statements
 - Q2: INSERT ... SELECT

Hands-on

- Chapter 4 exercise questions 4 and 10 for TAL Distributors
- SQLPlus screenshot

TEST TWO on 10/21

- Same pattern for TEST TWO, THREE, FOUR, and FINAL
 - CREATE based on entity/relationship description
 - INSERT INTO
 - Update value in a column in the given row: regular value or NULL
 - Add a new column or modify an existing column
 - All sorts of SELECT ... WHERE
 - DROP this table

Homework

- Chapter 4 exercise questions 1-10 for TAL Distributors
- Chapter 4 exercise questions 1-6 for Colonial Adventure Tours